

# Weekly Report

Oct. 1<sup>st</sup>, 2018

## Done:

1. 一些概括, 总之单纯使用 VF, DF 并不现实; 在专业领域直接想生成报告也也不现实. 下面是从数据关系和 VFDF 关系展开, 试图设定一些规则. 在专业领域, 我认为可以像 Chris 的 TSI 一样先交互再生成报告. 我们可以提供一些信息(计算所得, 但最后报告生成还是要靠专家定夺).

参考了之前自己的 case 和其他 PeerFinder, EventFlow, data brokering, urban pulse 等我认为比较有名的 visual report 或者半 report 文章

## Using Map: when Geospatial information is critical; when the relation between/among objects is mostly geo-based | VF

1. If multiple complicated layers (scalar field), we may adopt multiple maps
  - a. Visual channels are limited. They will interfere with each other.
  - b. Although we can encode 4 or even more attributes simultaneously, complex encodings may not intuitive for users to read and interpret,
2. Simple layers like icon layer/glyph layer can be simultaneously placed
  - a. Glyph can be used to show  $\geq$  two attributes, for example: the UCSD fire map, temperature & wind direction/speed; FaVVET encodig-style (use DF to extract key info/statistics and then VF)
3. If the dynamic information is also important, use small multiple maps

## LineChart, Streamgraph, or simple event-based vis (like LifeLine): Time series data and their relation

1. Show trends
2. DF + VF Anomalies detection (simple algorithms provided) + simple marks
3. Relations
  - a. Juxtaposition VF
  - b. DTW or other measurements and distance matrix DF + VF
    - i. Perhaps we can allow use to rearrange how these time series stacked?
    - ii. Then also allow marks or annotations

## Spatial - time relation

1. Extract time series from spatial-temporal information (like fire size along time)
  - a. Small multiple map + time series like vis, align using timestamps (mainly VF - but if required we can look back to previous slide method)
2. Extract statistics from spatial-temporal (frequency, avg. size of fires at one place)
  - a. LineUp design, along with a big map (DF + VF)

2. 继续复习 keras 操作; 学习一些强化学习(David Silver 在 Youtube 上的教程)的内容: 入门章节, 与 Markov 过程作为强化学习的一个环境的阐述. 在此之前看过一些教程视频都比较粗(很多是直接上了深度网络, 而没有讲最初的强化学习原理与细节), 这次是从零开始的教程. [因为看到了一些强化学习可以运用于电网电力资源优化的方法].

3. BeXplorer 视频压缩. 期间出现了诸如同音源声音不一致\音频突然跳过某些发音问题,

通过改采样频率\软件降噪再加耳朵辨听解决了问题.

**To Do:**

1. 上述 1 的讨论
2. 上述 2 的继续
3. 整理行李

**Paper Reading:**

Done 部分中的 2 看了周志华的书籍以及 Dynamic Programming 概念的书籍.